

Preventing Perinatal HIV in New York City: A 20-Year Public Health Perspective

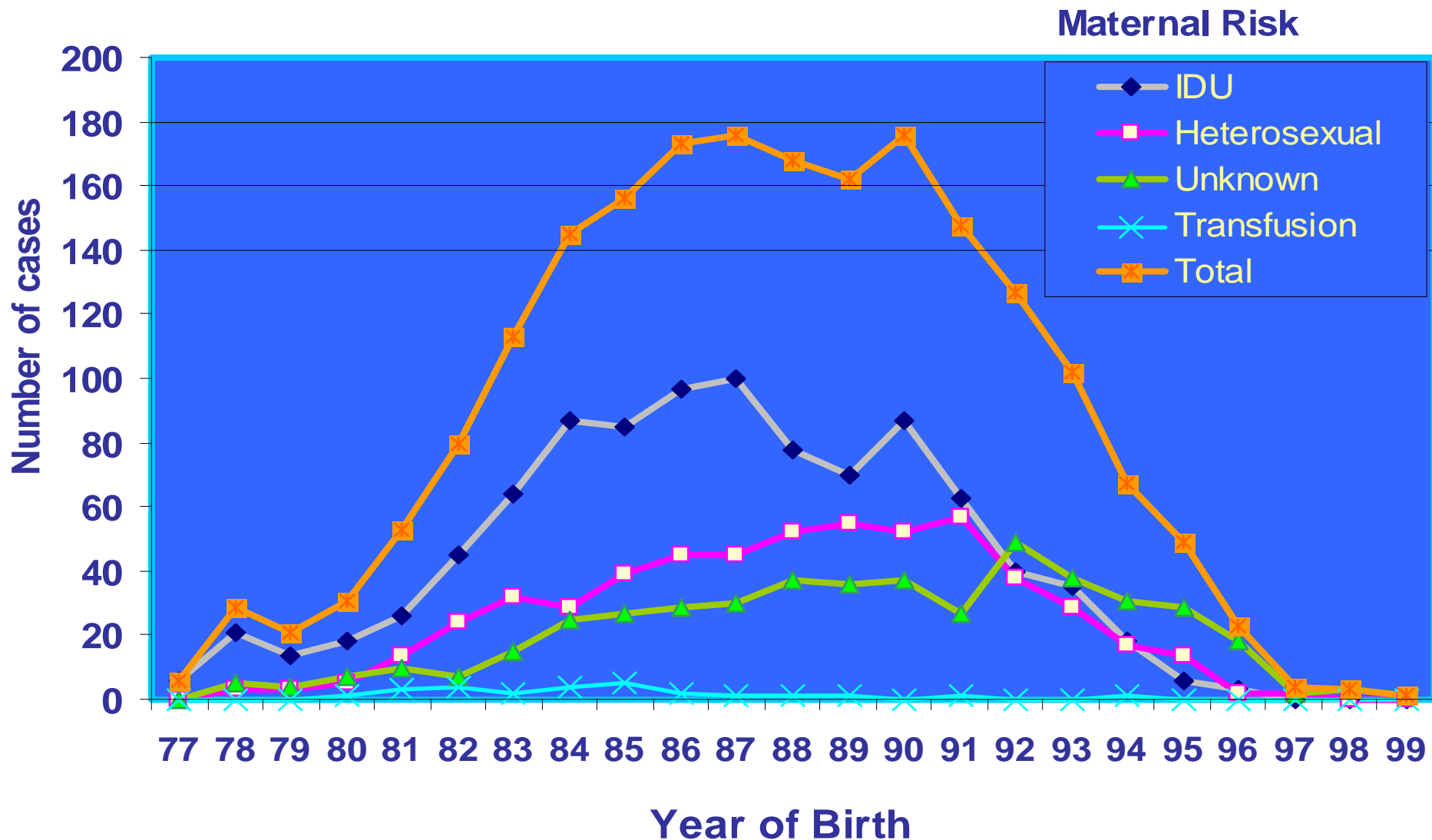
New York City Department of Health
HIV/AIDS Surveillance Program
Pediatric Special Projects Unit

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Perinately Acquired AIDS in NYC, Total and by Maternal Risk, NYCDOH, 1977-1999



Declines in perinatal AIDS cases in NYC over past decade attributable to:

- Fewer HIV infected women giving birth**
- Lowering of HIV transmission rate**
- Delay in AIDS due to improvement in medical therapy**

Trends in Perinatal HIV in NYC

Data on HIV exposed births in NYC

- The **NYC Department of Health** has monitored HIV exposed infants since 1989 at 22 pediatric HIV care sites:
 - Pediatric Spectrum of HIV Disease (PSD)
 - HIV/AIDS Surveillance
- **NYS DOH** collects supplemental data since 1996

New York State Newborn Serosurvey and Newborn Testing Programs

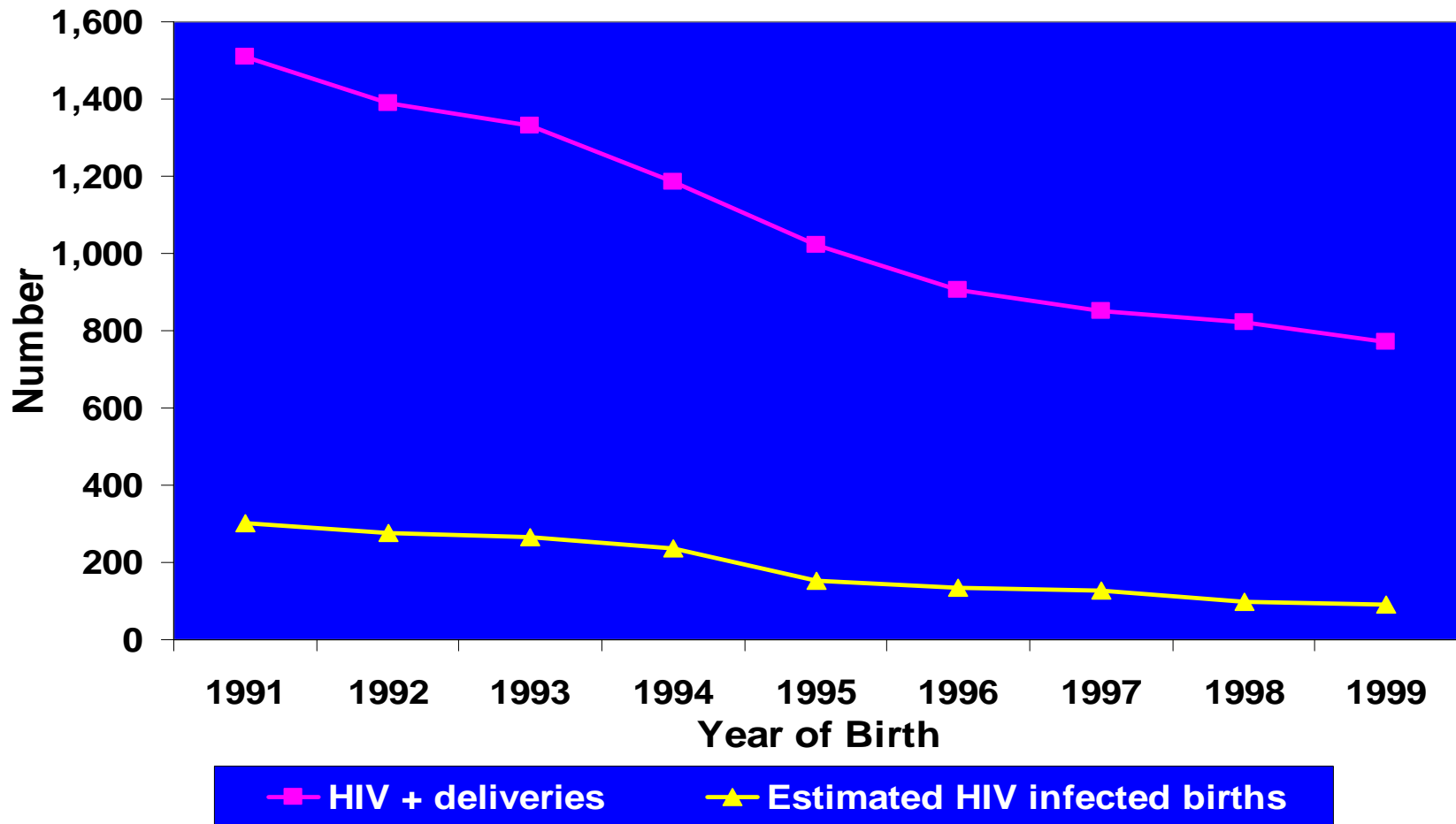
NYS Department of Health has monitored HIV positivity of newborns through heelstick testing since 1988:

- 1988-96: Blinded serosurvey
- 1996: Serosurvey results offered, majority of mothers receive results
- 1997-00: Universal linked testing of newborns (with supplemental data collection)

Data Collected by NYC (since 1989) and NYS (since 1996) include:

- **HIV infection status of HIV exposed newborns**
- **Prenatal care**
- **Prescription of ZDV and other ARVs prenatally, intrapartum, and neonatally**
- **Mode of delivery**
- **Maternal risks**

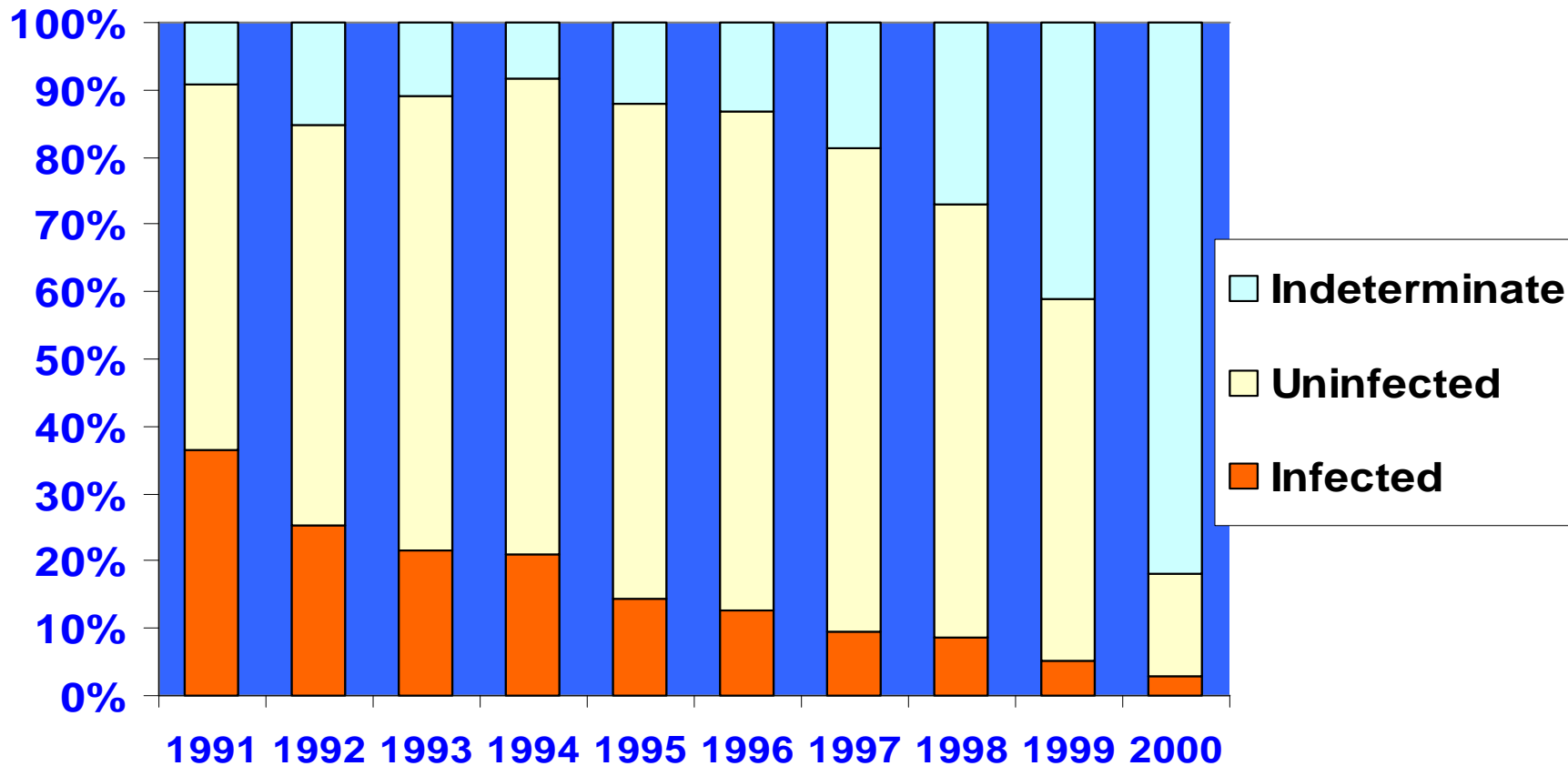
Trends in HIV Exposed Deliveries* and Estimated Numbers of HIV Infected Infants, NYC, 1991-1999



*** NYS Department of Health, HIV/AIDS Epidemiology Program**

HIV Infection Status of Children Born to HIV Infected Women in 22 NYC Hospitals, 1991-2000

Percent



Year of Birth

ZDV introduced for prophylaxis

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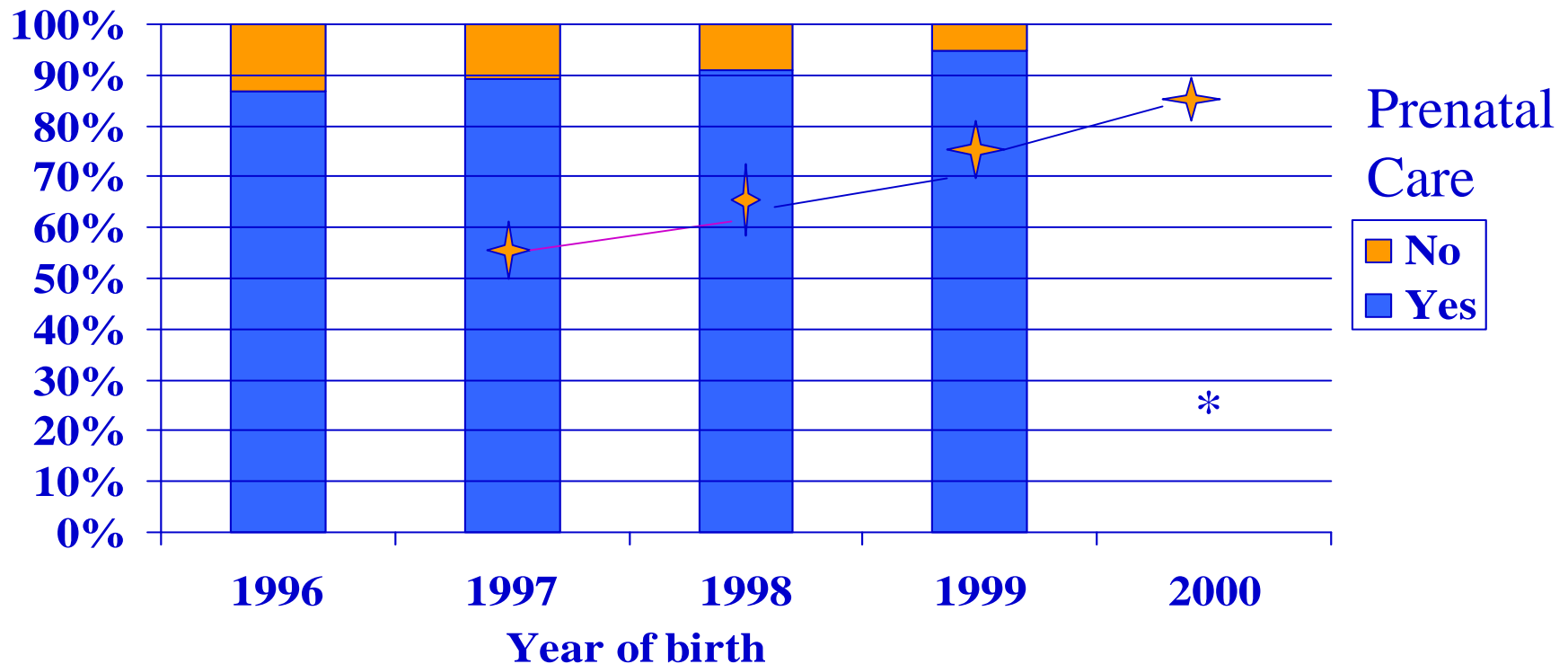
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Successes in Prevention

Steps to Prevent Perinatal HIV Transmission

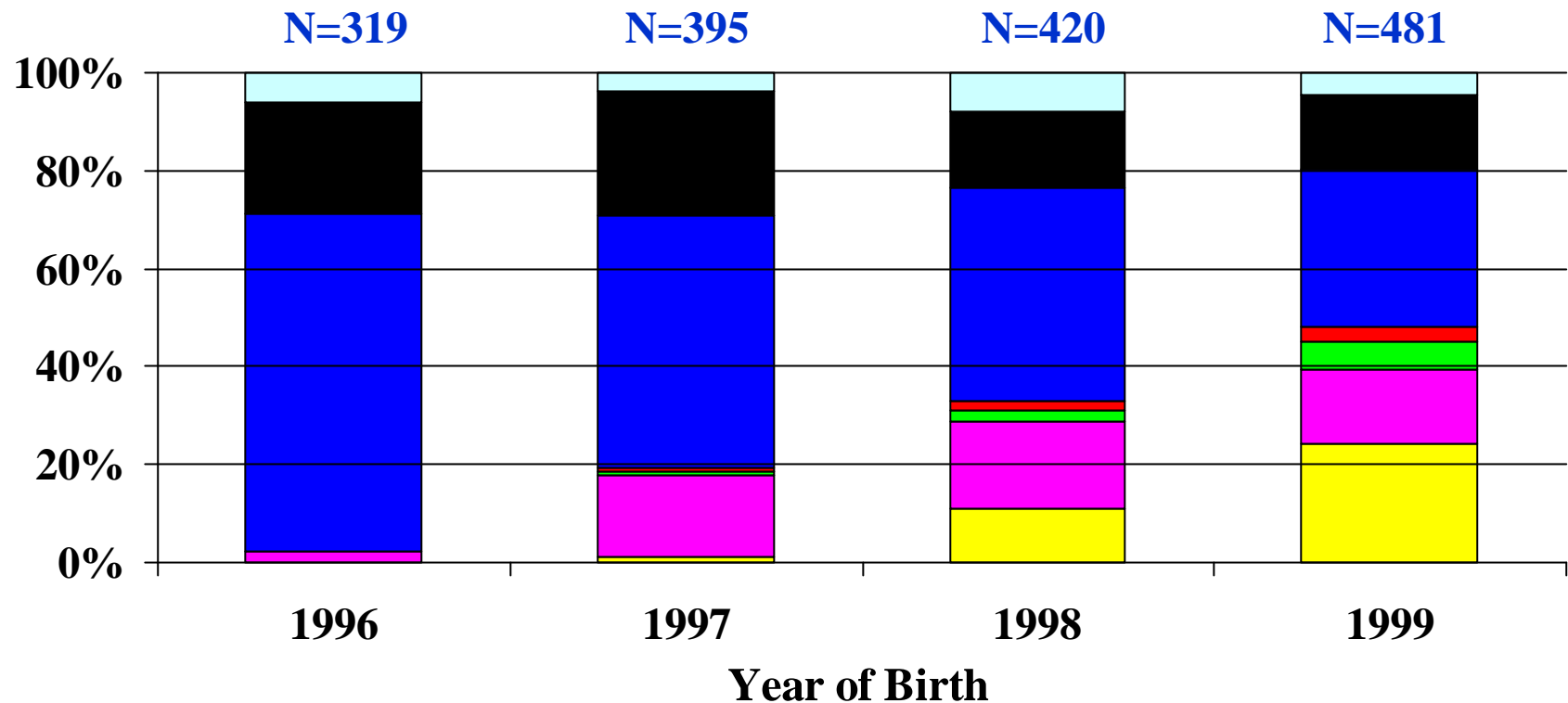
- Prevention of HIV infection in women
- Quality care for HIV infected women
- Prenatal Care
- Prenatal evaluation for HIV
- Prescription of antiretrovirals for perinatal prophylaxis
- Delivery by elective cesarean section

Prenatal care* in 2,298 HIV-exposed deliveries, 22 NYC sites, 1996-99



*For 23% of deliveries, data on prenatal care not available; no data yet for 2000. ★ Percent tested prenatally: NYS Department of Health, HAEP

Trends in Prenatal ARV Use, Women in Prenatal Care, 22 NYC Sites, 1996-1999

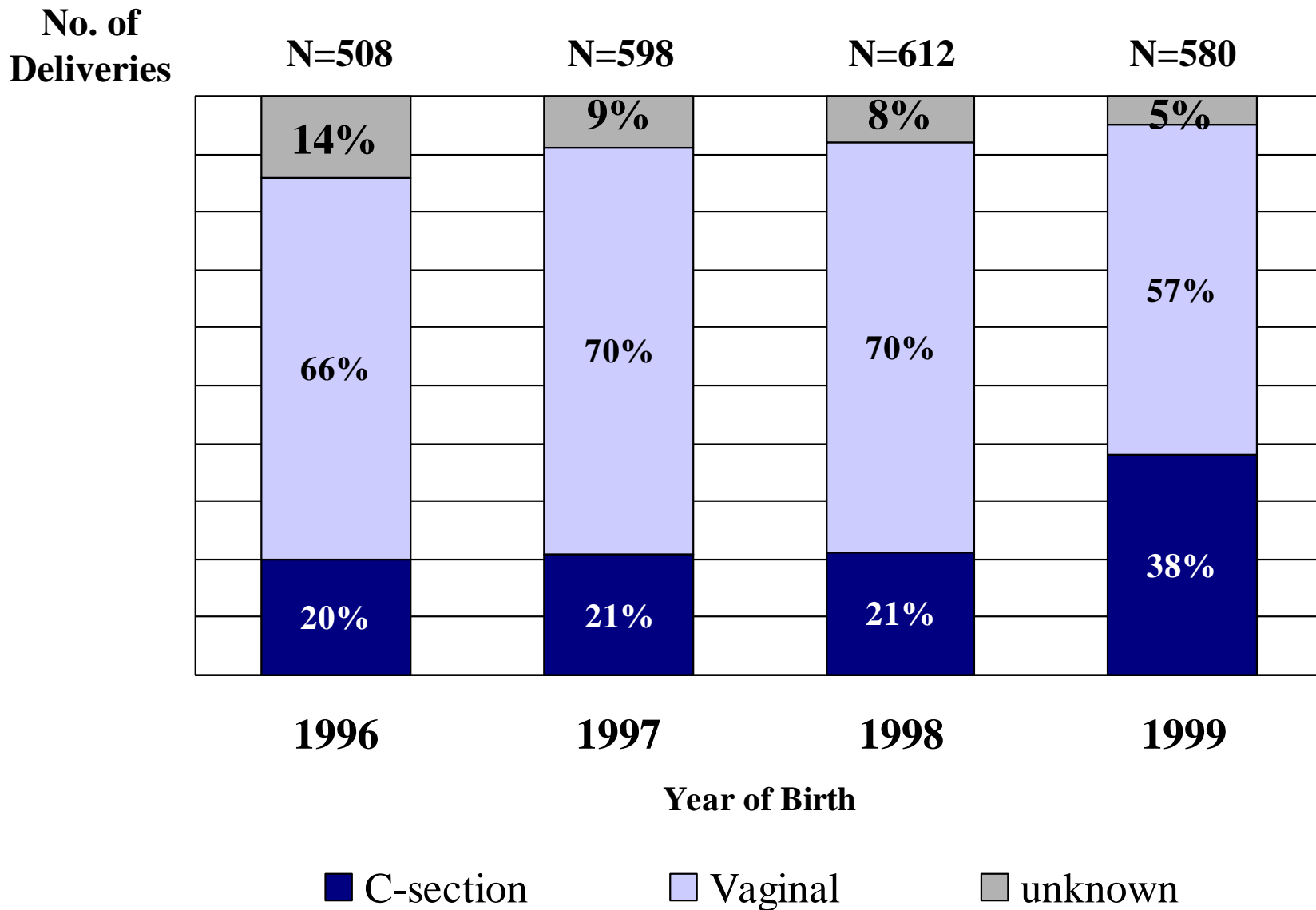


Infant HIV Infection Status, by Antiretroviral Use in 1,183 Infants Born to HIV-infected Women, 1/1996-6/1999

TIMING OF ARV USE	N	% INF	% UNF	% IND	OR (95%CI)
Prenatal, intrapartum and neonatal ZDV only	558	6	70	24	0.18 (0.11-0.29)
Prenatal ZDV with other ARV plus intrapartum and neonatal ZDV	280	1	76	23	0.04 (0.01-0.12)
Neonatal ZDV only (started within 24 hours of birth)	59	12	61	27	0.41 (0.16-1.03)
No ARVs	286	24	51	25	Referent

Peters, V. *et al*; Retrovirology Conference, Chicago, February 2001

Mode of Delivery in 2,298 HIV-Exposed Deliveries, 22 NYC Sites, 1996-1999



**Can mother to child HIV
transmission be eliminated
in NYC?**

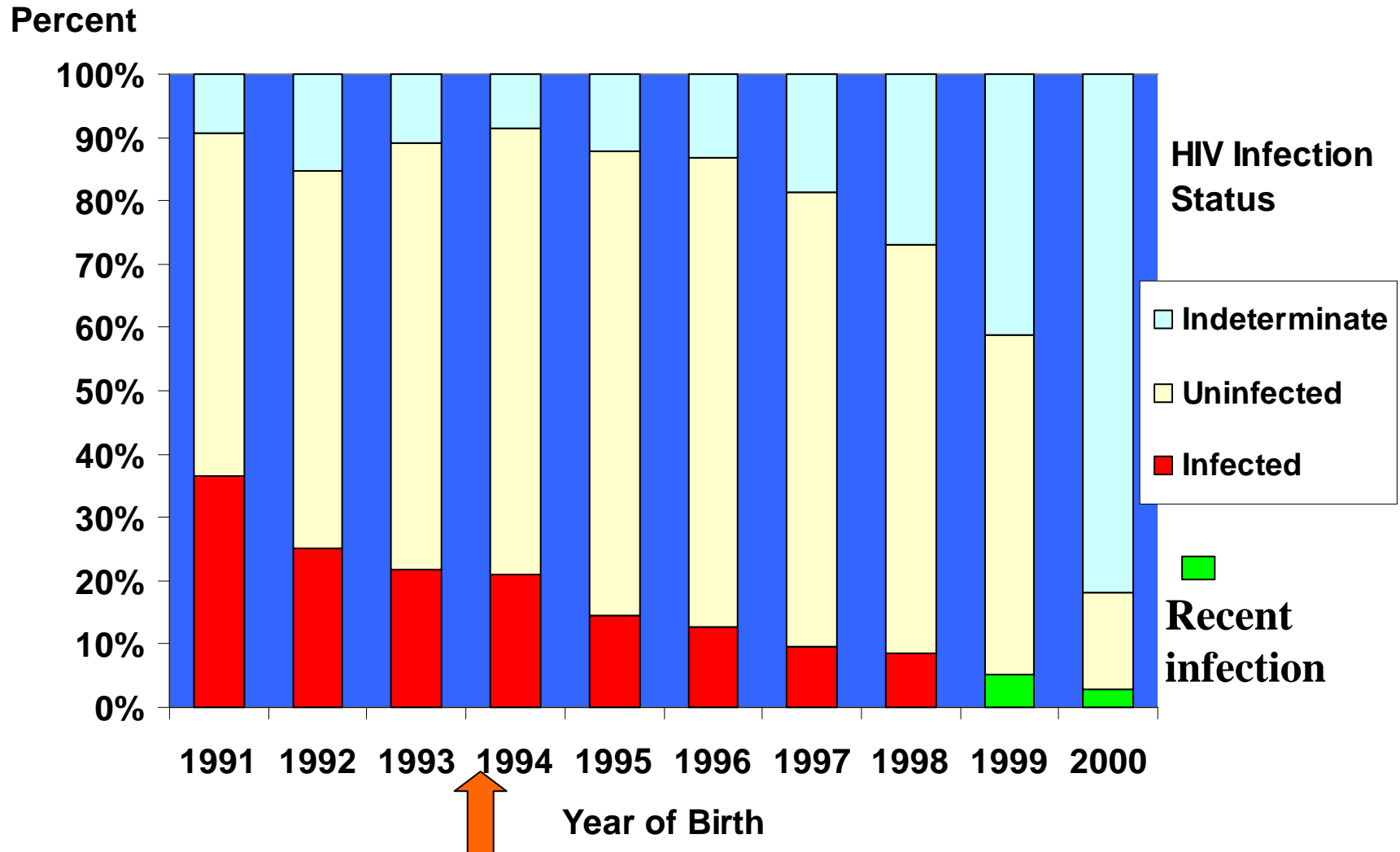
YES

... with the will to change basic conditions
that account for ongoing infection

Elimination of Perinatal HIV in NYC: Remaining Obstacles

- Lack of prenatal care
- HIV not identified before delivery
- ARVs not prescribed, not accepted, concerns about adverse effects
- ARV prophylaxis failures? (drug resistance, nonadherence or other causes)
- Ongoing new HIV infection in women
- Role of street drugs and alcohol, homelessness

HIV Infection Status of Children Born to HIV-infected Women in 22 NYC Hospitals, 1991-2000



ZDV introduced for prophylaxis

Closer Examination of 1999-2000 Births: Data as of 12/2000, 881 Births, 22 NYC Sites

HIV-infected Status	Number	%
Infected	40	5
Uninfected	364	41
Indeterminate	477	54

Hierarchy of missed opportunities and failures for prevention in NYC, comparing prenatal treatment of 40 HIV- infected and 364 uninfected infants, 1999-2000

Event	<u>Infected</u>		<u>Uninfected</u>		<u>OR</u>
	N	%	N	%	(95% CI)
<u>No PNC</u>	3	7.5	9	2	3.20 (0.65-13.96)
<u>PNC but no HIV Test</u>	7	17.5	15	4	4.94 (1.68-14.11)
<u>Prenatal test, no ZDV</u>	5	12.5	16	4	3.11 (0.93-9.78)
<u>Any ZDV</u>	15 *	37.5	280	77	0.18 (0.09-037)
<u>Incomplete Data</u>	10	25.0	44	12	NA

Can Prenatal ARV prophylaxis fail?

Evaluation of possible failures of antiretroviral prophylaxis for perinatal HIV prevention

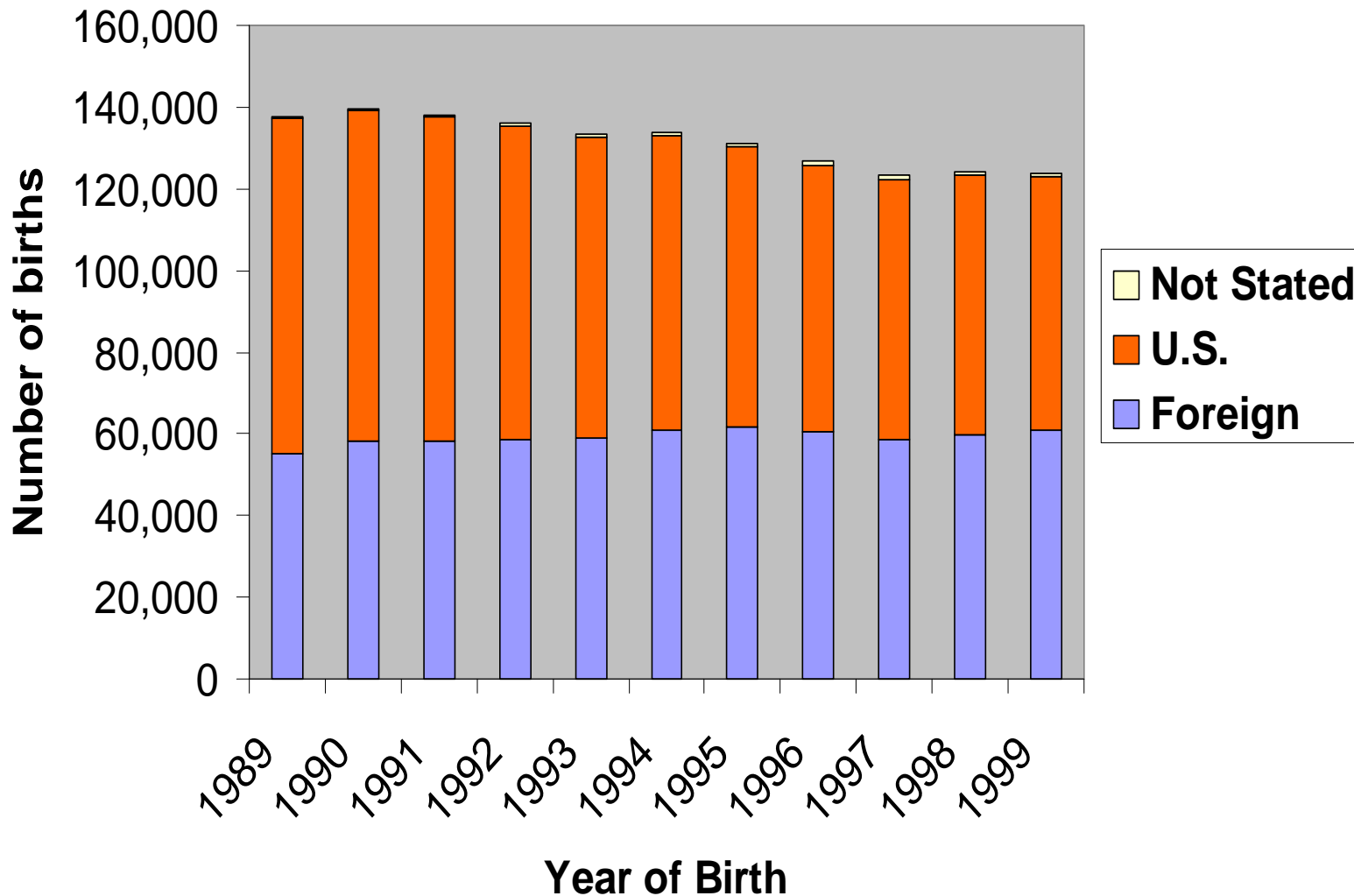
- CDC-PSD project in cooperation with NYC-PSD
- Examination of medical record data on children and mothers where mother apparently was prescribed ARVs yet child infected
 - Illicit drug use
 - Adherence
 - Drug resistance
 - Obstetrical complications
- Courtesy Monica Nolan, MD, CDC EIS Officer, 2001

Immigrant Populations

Role of Cultural Barriers in Immigrant Populations

- 33% of NYC population is foreign-born
- 49% of 1999 births to foreign-born mothers
- Some immigrants undocumented, and/or lack health insurance
- Language and culture are different

NYC births* by year by nativity of mother, 1989-99



***New York City Department of Health, Office of Vital Statistics.**

Case Histories: Immigrants

- African family, 2 wives, one infected, one uninfected: HIV infected mother illiterate, father is the translator
- African mother learns of HIV status, very upset, did not come back until ready to deliver.
- *Courtesy of Elaine Abrams, MD, Harlem Hospital, 2001.*

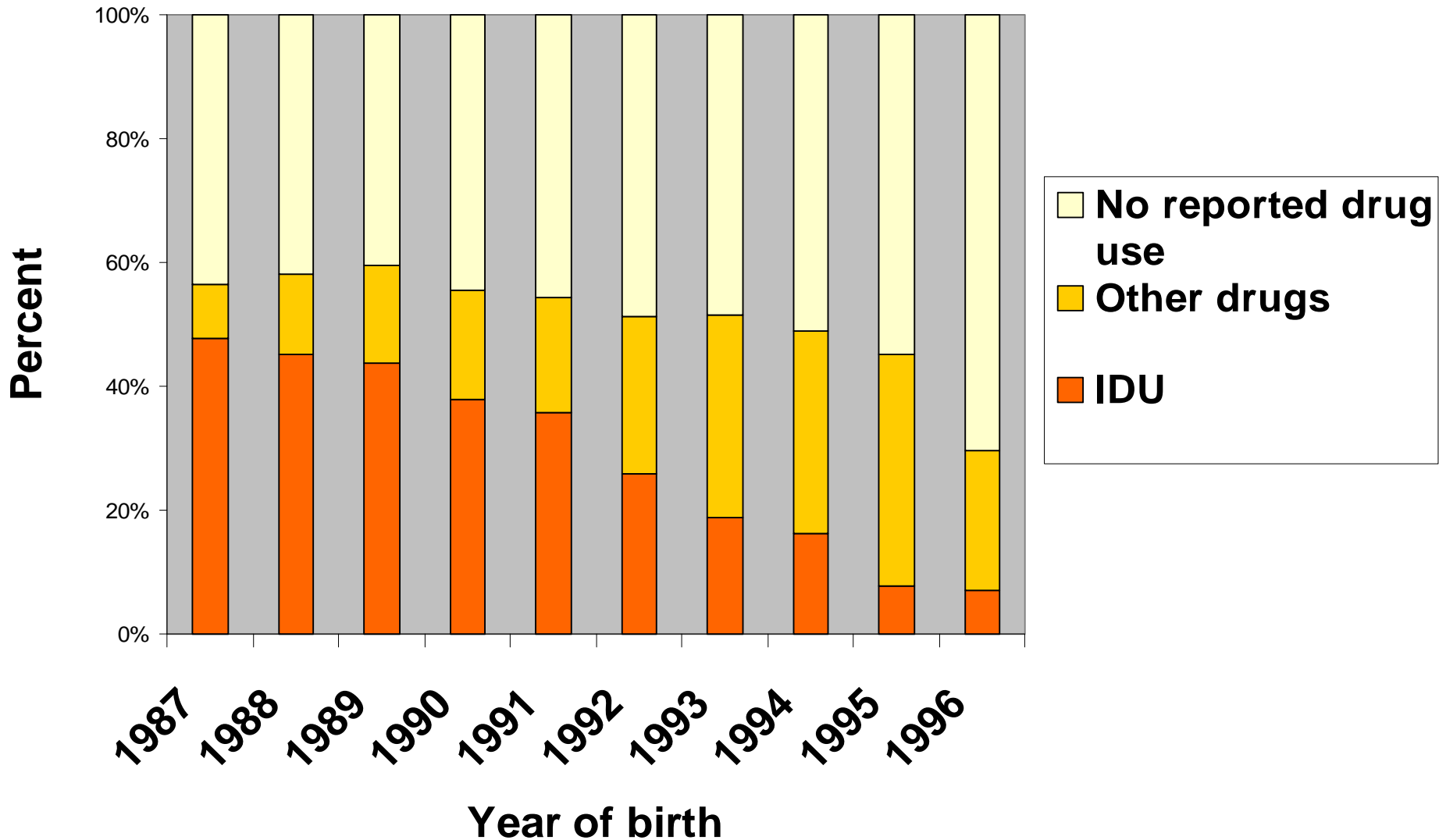
Drug Use

Case Histories:

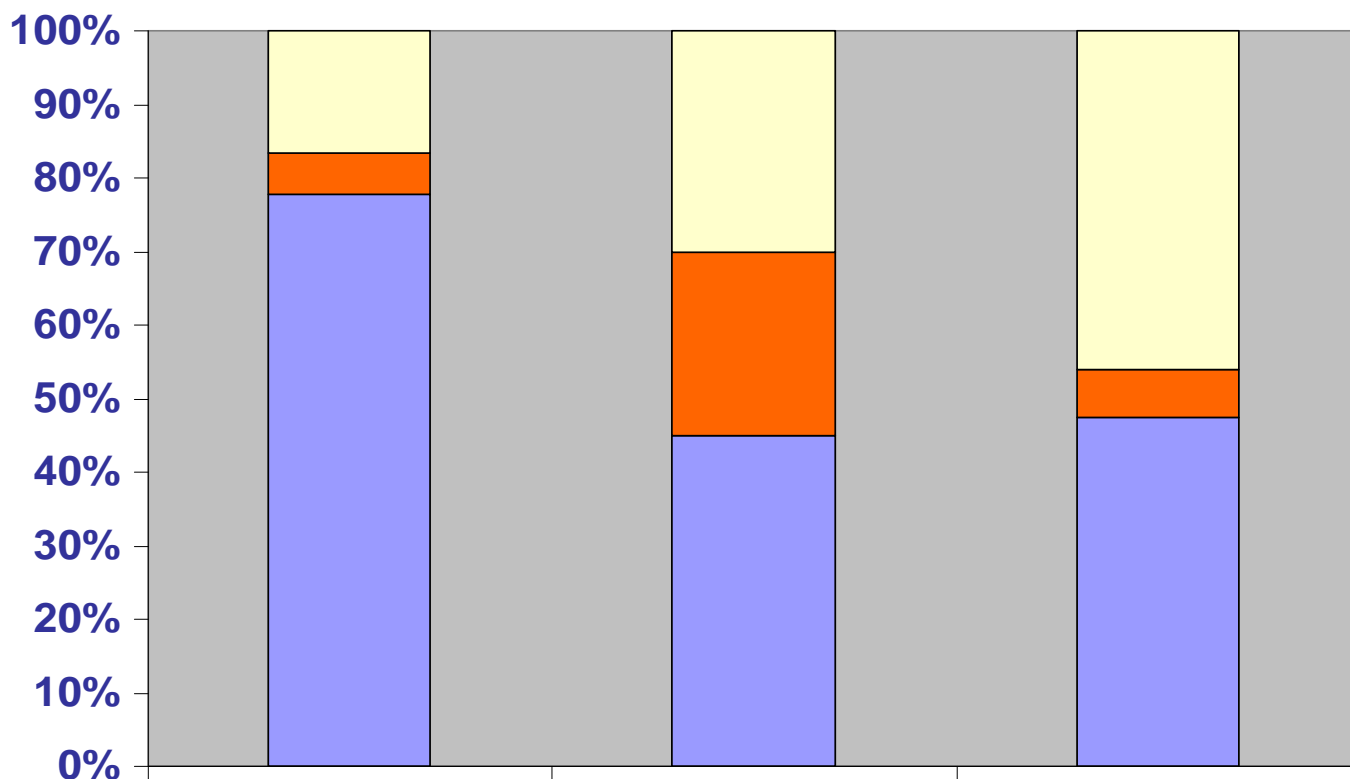
Drug-Using Women

- Drug-using mother nodding out in waiting room, baby in arms
- Woman needing fix, cannot stay in the waiting room long enough to keep her appointment, leaves without seeing health care provider
- *Courtesy of Vicki Peters, MD, observations at Mt. Sinai Hospital, early 1990's*
- *Jo Sothern, PhD, HRI study interviews, NYSDOH*

Drug use in mothers of HIV exposed children in PSD-NYC by year of birth, 1987-96



Receipt of Prenatal Care by History of Drug Use, for Mothers of 324 HIV-infected Children in PSD, Born 1994-1999



■ PNC-unknown	6	41	70
■ PNC-no	2	34	10
■ PNC-yes	28	61	72

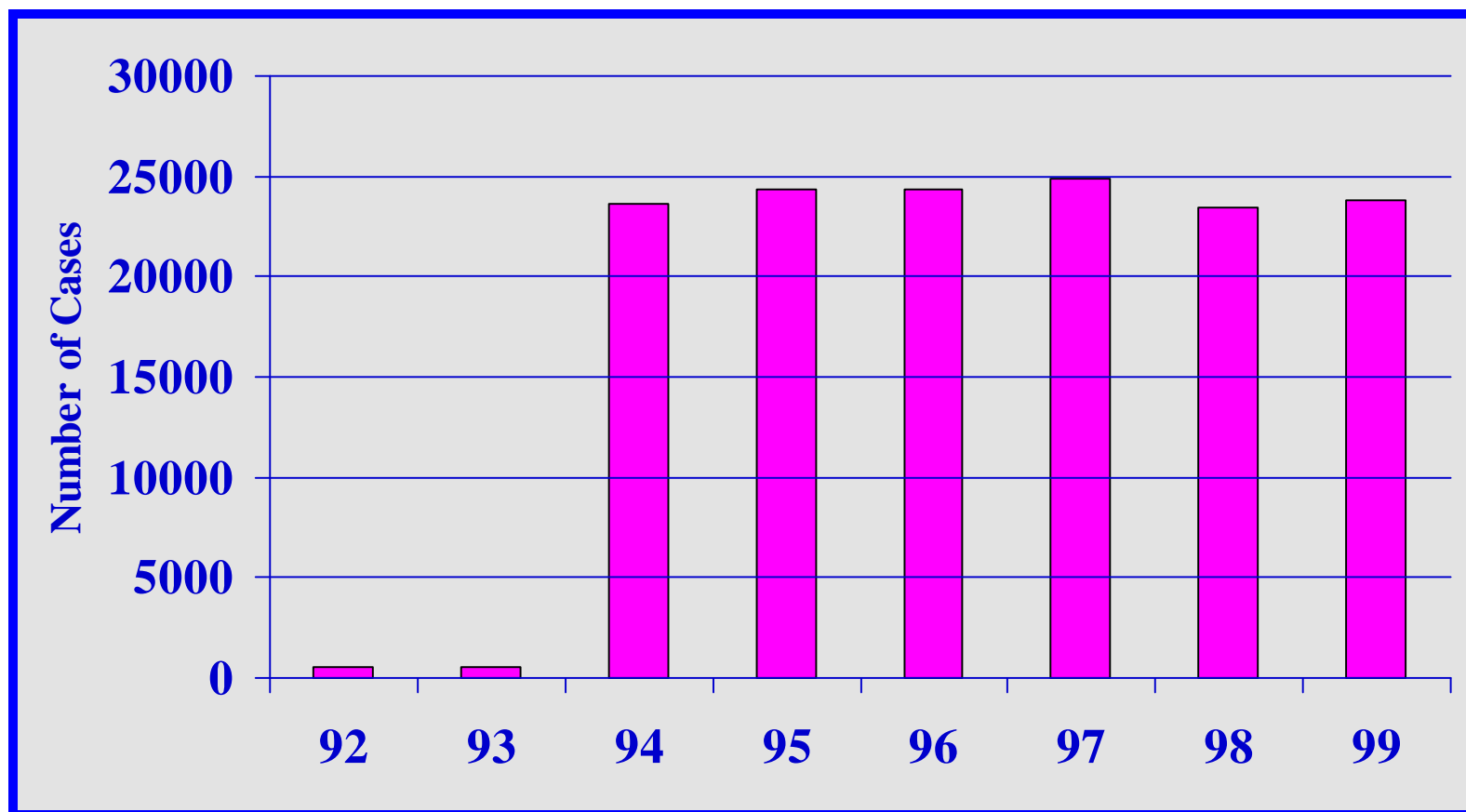
Race/Ethnicity

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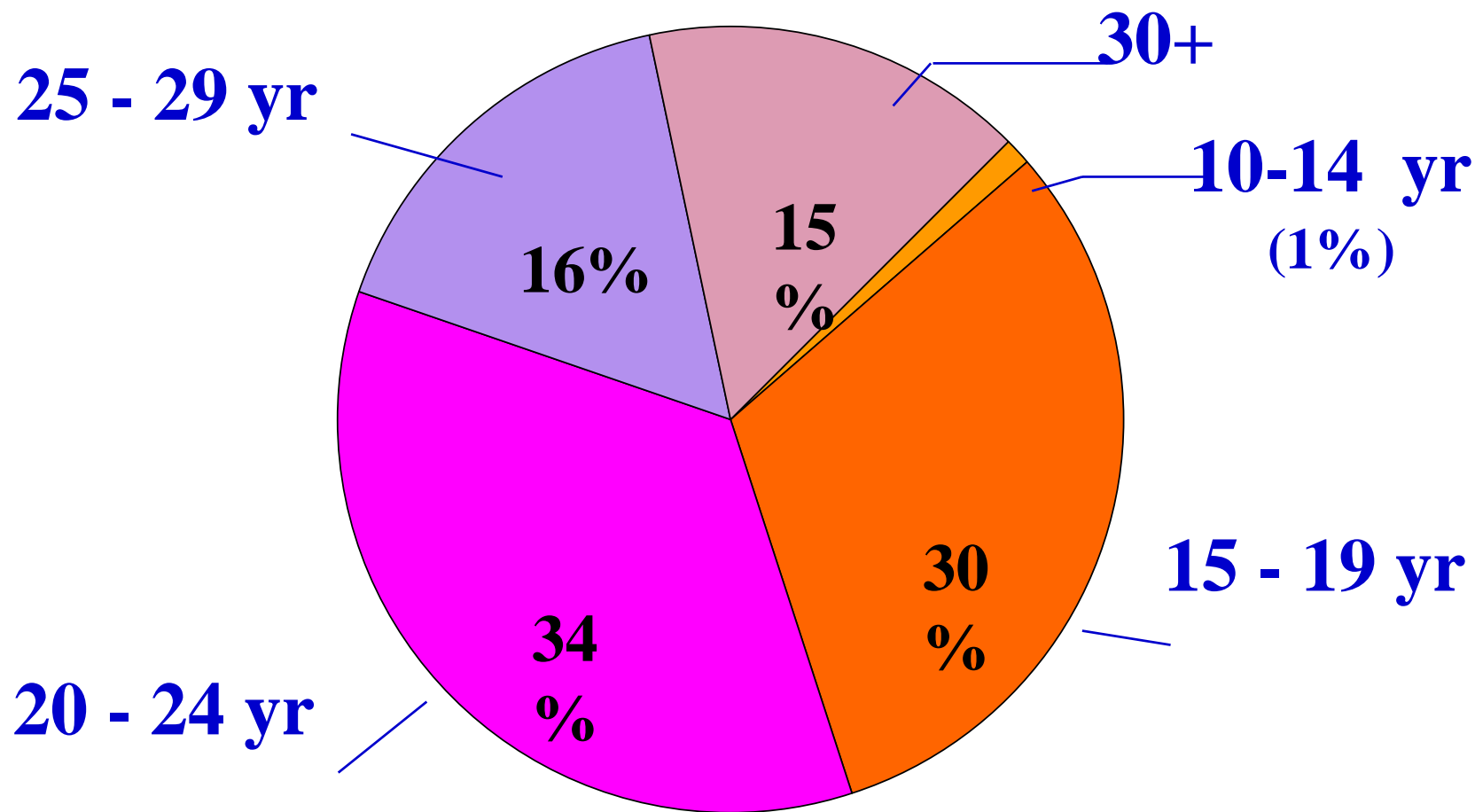
Risks for HIV in women of childbearing age

Cases of Chlamydia in Women, NYC, 1992-1999



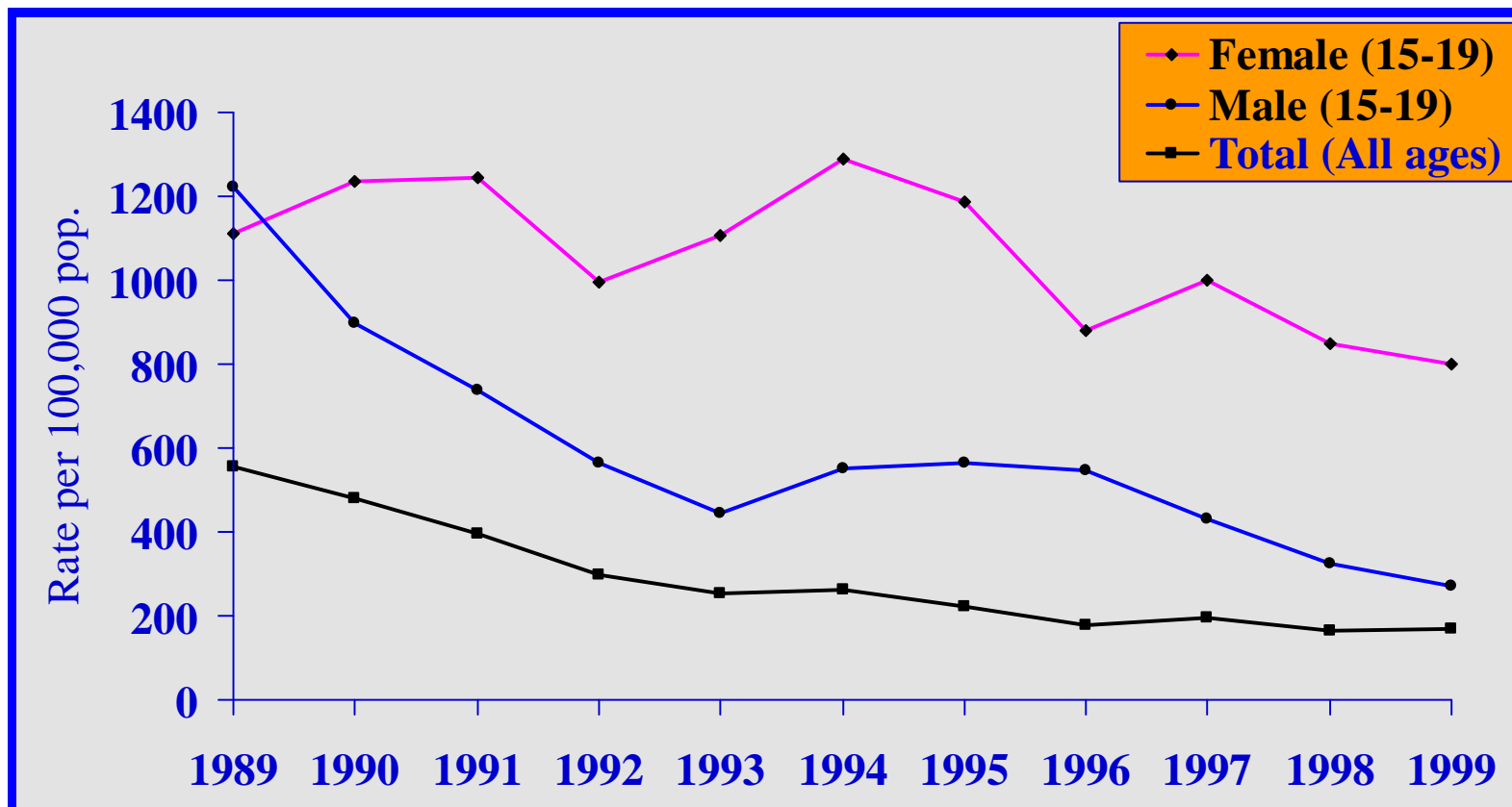
NYC STD Control Program Surveillance Data

Chlamydia in women by Age, 1999



NYC STD Control Program Surveillance Data

Reported GC/100,000 Pop., by Gender & Age , NYC, 1989-1999



NYC STD Control Program Surveillance Data

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HIV Seroprevalence by Race: Young NYC Men who have Sex with Men The Young Men's Survey Phase II (Age 23-29)

Race	N+/N Tested	% Positive
Black	48/146	32.9%
Hispanic	28/197	14.2%
White	2/106	1.9%
Asian	0/40	0.0%
Total	87/529	16.4%

Courtesy of Lucia Torian, PhD, NYC Department of Health

Lifetime Number of Sex Partners: Young NYC Men who have Sex with Men

The Young Men's Survey Phase II (Age 23-29)

	Mean (SD)	Median	Range
Entire Sample	62.2(160)	17	1-2000
White Men	106(253)	30	1-2000
Black Men	46(133)	11	1-1400
Hispanic Men	58(135)	15	1-1000
Gay Men	73(178)	20	1-2000
Bisexual Men	19(29)	9	1-150
Straight Men	85(233)	7	1-1000
Transgender Persons	142(152)	85	10-500

Courtesy of Lucia Torian, PhD, NYC Department of Health

Final Comments

- Perinatal!HIV has been reduced and ! can be eliminated in NYC!
- Must first prevent HIV infection in ! women!
- ! Innovative approaches to prenatal care
- ! Universal prenatal HIV testing!
- ! Access to excellent HIV care for women

*LaTour: “People are still having sex”,
February, 2001*

“People are still having sex.

Lust keeps on lurking.

Nothing makes them stop.

This AIDS thing’s not working.”

NYC DOH Perinatal HIV Surveillance: Participating Institutions and Pediatricians

- Albert Einstein (Arye Rubinstein)
- Beth Israel (Stephen Heaton)
- Bronx Lebanon (Saroj Bakshi)
- Brookdale (Shebla Naqvi)
- Columbia-Presbyterian (Jane Pitt)
- Downstate (Edward Handelsman)
- Harlem (Elaine Abrams)
- Incarnation Children's Center (Stephen Nicolas)
- Jacobi Hospital (Andrew Wiznia)
- Kings County (N. Desai)
- Lincoln (Sutha Rao)
- Long Island College (Philippa Gordon)
- Long Island Jewish (Vincent Bonagura)
- Metropolitan (Marukh Bamji)
- Montefiore (Nathan Littman)
- Mount Sinai (Emilia Rivadeneira)
- New York Hospital (Joseph Stavola)
- North Central Bronx (Jacob Abadi)
- Queens General (Paul Zam)
- St Lukes-Roosevelt (Stephen Arpadi)
- St. Vincents (Mona Rigaud)
- Woodhull (Jackson Omene)

*The
City
of
New York*



Steps underway or planned to eliminate perinatal HIV in NYC

- **Personal:**
 - Better focused public education (*NYC project*)
- **Social:**
 - Improve availability of PNC
 - Adapt clinic schedule and policy to eliminate waiting, allow walk ins, ? Longer hours
 - Outreach to women in high risk neighborhoods (*NYS program*)
- **Structural:**
 - Increase Prenatal testing
 - Provider education (*NYS project*)
 - Universal prenatal HIV testing (legislation or regulations)